SEQUENCE LISTING

<110> Case, Casey C.
Zhang, Lei
Sangamo Biosciences, Inc.

<120> Functional Genomics Using Zinc Finger Proteins

<130> 019496-002000US

<140> 09/395,448
<141> 1999-09-14

<150> 09/229,007
<151> 1999-01-12

<150> 09/229,037
<151> 1999-01-12

<160> 23

<170> PatentIn Ver. 2.1

<210> 1
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:exemplary motif
of C2H2 class of zinc finger proteins (ZFP)

<220>
<221> MOD_RES
<222> (2)..(3)
<223> Xaa = any amino acid

<220>
<221> MOD_RES
<222> (4)..(5)
<223> Xaa = any amino acid, may be present or absent

<220>
<221> MOD_RES
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<223> Xaa = any amino acid

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<223> Xaa = any amino acid

<220>
<221> MOD_RES
<222> (23)..(24)
<223> Xaa = any amino acid, may be present or absent

<400> 1

Cys	Xaa	Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5				10					15		

Xaa Xaa His Xaa Xaa Xaa Xaa Xaa His
20 25

<210> 2
<211> 10
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ZFP target site with two overlapping D-able subsites

<220>
<221> modified_base
<222> (1)..(2)
<223> n = g, a, c or t

<220>
<221> modified_base
<222> (5)
<223> n = g, a, c or t

<220>
<221> modified_base
<222> (8)
<223> n = g, a, c or t

<220>
<221> modified_base
<222> (9)
<223> n = a, c or t; if g, then position 10 cannot be g or t

<400> 2
nngkngknnn 10

<210> 3
<211> 10
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ZFP target site with three overlapping D-able subsites

<220>
<221> modified_base
<222> (1)..(2)
<223> n = g, a, c or t

<220>
<221> modified_base
<222> (5)
<223> n = g, a, c or t

<220>
<221> modified_base
<222> (8)
<223> n = g, a, c or t

<400> 3
nngkngkngk 10

<210> 4
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:linker

<400> 4
Asp Gly Gly Gly Ser
1 5

<210> 5
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:linker

<400> 5
Thr Gly Glu Lys Pro
1 5

<210> 6
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:linker

<400> 6
Leu Arg Gln Lys Asp Gly Glu Arg Pro
1 5

<210> 7
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:linker

<400> 7
Gly Gly Arg Arg
1

<210> 8
<211> 5
<212> PRT
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<220>
<223> Description of Artificial Sequence:linker

<400> 8
Gly Gly Gly Gly Ser
1 5

<210> 9
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:linker

<400> 9
Gly Gly Arg Arg Gly Gly Gly Ser
1 5

<210> 10
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:linker

<400> 10
Leu Arg Gln Arg Asp Gly Glu Arg Pro
1 5

<210> 11
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:linker

<400> 11
Leu Arg Gln Lys Asp Gly Gly Gly Ser Glu Arg Pro
1 5 10

<210> 12
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:linker

<400> 12
Leu Arg Gln Lys Asp Gly Gly Gly Ser Gly Gly Gly Ser Glu Arg Pro
1 5 10 15

<210> 13
<211> 97
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ZFP sequence in control construct

<400> 13
Val Pro Gly Lys Lys Lys Gln His Ile Cys His Ile Gln Gly Cys Gly
1 5 10 15

Lys Val Tyr Gly Gly His Asp Thr Val Val Gly His Leu Arg Trp His
20 25 30

Thr Gly Glu Arg Pro Phe Met Cys Thr Trp Ser Tyr Cys Gly Lys Arg
35 40 45

Phe Thr Ala Ala Asp Glu Val Gly Leu His Lys Arg Thr His Thr Gly
50 55 60

Glu Lys Lys Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met Leu Val
65 70 75 80

Val Ala Thr Gln Leu His Ile Lys Thr His Gln Asn Lys Lys Gly Gly
85 90 95

Ser

<210> 14
<211> 292
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:designed ZFP construct (from KpnI to BamHI) targeting 9-base pair target site in VEGF promoter

<220>
<221> CDS
<222> (2)..(292)

<400> 14
g gta ccg ggc aag aag aag cag cac atc tgc cac atc cag ggc tgt ggt 49
Val Pro Gly Lys Lys Lys Gln His Ile Cys His Ile Gln Gly Cys Gly
1 5 10 15

aaa gtt tac ggc cgc tcc gac aac ctg acc cgc cac ctg cgc tgg cac 97
Lys Val Tyr Gly Arg Ser Asp Asn Leu Thr Arg His Leu Arg Trp His
20 25 30

acc ggc gag agg cct ttc atg tgt aca tgg tcc tac tgt ggt aaa cgc 145
Thr Gly Glu Arg Pro Phe Met Cys Thr Trp Ser Tyr Cys Gly Lys Arg
35 40 45

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ttc acc aac cgc gac acc ctg gcc cgc cac aag cgt acc cac acc ggt   193
Phe Thr Asn Arg Asp Thr Leu Ala Arg His Lys Arg Thr His Thr Gly
     50                  55                  60

gag aag aaa ttt gct tgt ccg gaa tgt ccg aag cgc ttc atg cgc tcc   241
Glu Lys Lys Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met Arg Ser
 65                  70                  75                  80

gac cac ctg tcc aag cac atc aag acc cac cag aac aag aag ggt gga   289
Asp His Leu Ser Lys His Ile Lys Thr His Gln Asn Lys Lys Gly Gly
                 85                  90                  95

tcc                                                              292
Ser
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<210> 15
<211> 97
<212> PRT
<213> Artificial Sequence
<223> Description of Artificial Sequence:designed ZFP construct (from KpnI to BamHI) targeting 9-base pair target site in VEGF promoter

<400> 15

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Val Pro Gly Lys Lys Lys Gln His Ile Cys His Ile Gln Gly Cys Gly
  1               5                  10                  15

Lys Val Tyr Gly Arg Ser Asp Asn Leu Thr Arg His Leu Arg Trp His
             20                  25                  30

Thr Gly Glu Arg Pro Phe Met Cys Thr Trp Ser Tyr Cys Gly Lys Arg
         35                  40                  45

Phe Thr Asn Arg Asp Thr Leu Ala Arg His Lys Arg Thr His Thr Gly
     50                  55                  60

Glu Lys Lys Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met Arg Ser
 65                  70                  75                  80

Asp His Leu Ser Lys His Ile Lys Thr His Gln Asn Lys Lys Gly Gly
                 85                  90                  95

Ser
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<210> 16
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer hVEGFU1

<400> 16
gaattctgtg ccctcactcc cctgg 25

<210> 17
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer
VEGFD2

<400> 17
accgcttacc ttggcatggt ggagg 25

<210> 18
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer
hVEHFU2

<400> 18
acacaccttg ctgggtacca ccatg 25

<210> 19
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer
VEGFD1

<400> 19
gcagaaagtc catggtttcg gaggcc 26

<210> 20
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer
VEGFU2

<400> 20
tgtttagaag atgaaccgta agcct 25

<210> 21
<211> 25
<212> DNA
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<220>
<223> Description of Artificial Sequence:PCR primer
VEGFD2

<400> 21
accgcttacc ttggcatggt ggagg 25

<210> 22
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer mVEGF

<400> 22
gcccccattg gtaccctggc ttcagttccc tggcaaca 38

<210> 23
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer VEGFD

<400> 23
gcagaaagtc catggtttcg gaggcc 26